Plant Pathology Circular No. 245
March 1983

Fla. Dept. Agric. & Consumer Serv.
Division of Plant Industry

BOTRYTIS BLIGHT OR GRAY MOLD

J. J. McRitchie and T. S. Schubert

Botrytis blight or gray mold as it is commonly known is found world-wide but most frequently in humid temperate to subtropical areas. Of the gray mold fungi, Botrytis cinerea Pers. is the most common and has the broadest host range with well over 200 reported hosts (1).

The fungus can cause blights of flowers, fruits, stems, and foliage of many ornamental (5) and vegetable plants (3), and causes rots of perishable plant produce at harvest and in storage (2). The fungus often establishes itself on injured tissues, and can persist as a saprophyte for long periods.

Although B. cinerea is best known as a destructive plant pathogen, one instance of infection by this pathogen is desireable, because grapes affected by this rot produce high quality sweet wines. This is the condition of grapes known as 'noble rot' or pourriture noble in France and Edelfaüle in Germany (1). The same fungus, however, can also produce the familiar destructive gray mold of grapes.

THE FUNGUS. Hyaline, egg-shaped, one-celled conidia are formed on branched, brown conidiophores. The arrangement of the spores gives the genus its name, from the Greek botrys, meaning a bunch of grapes (3). Upon occasion, black sclerotia form on or just underneath the host epidermis. These sclerotia, which have a black rind and light interior composed of a dense mass of hyphae, are resistant to environmental extremes and act as resting bodies. The perfect or sexual stage of B. cinerea is Botryotinia fuckeliana (deBary) Whetz. In fact, of the 22 species of Botrytis, 13 are known to form apothecia of Botryotinia (1).

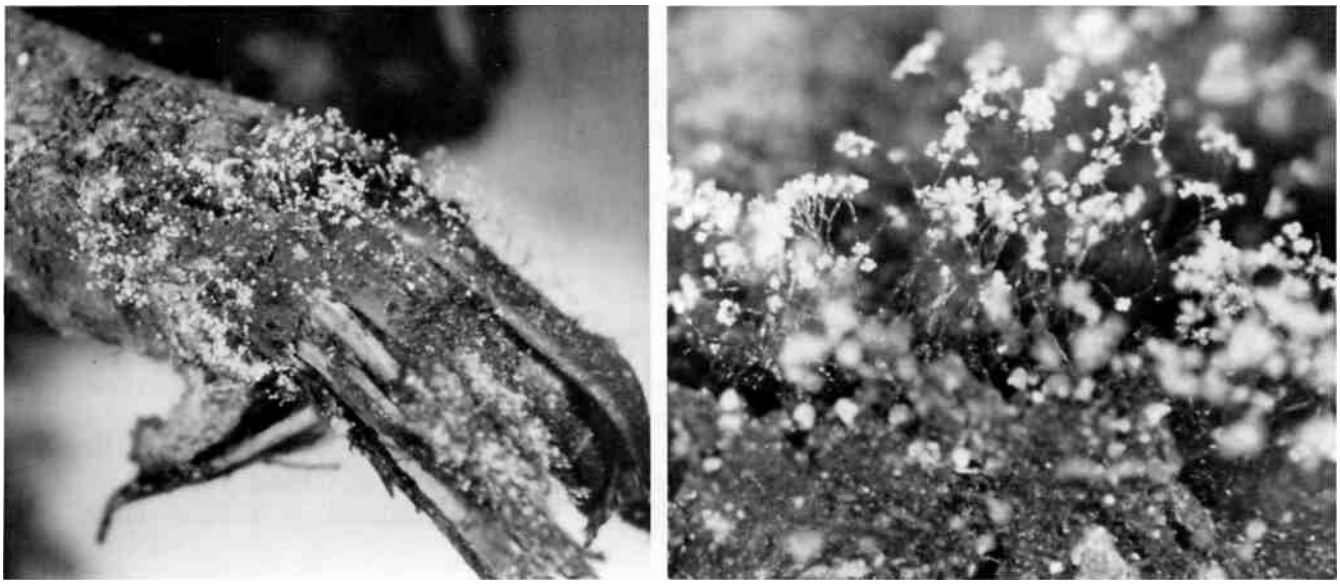

Fig. 1. Botrytis cinerea. A) Sporulating profusely on old diseased geranium stem tissue. B) Characteristic 'grape cluster' arrangement of Botrytis spores. (DPI Photo #702693-18 and #702693-19)

[1]Plant Pathologists, Bureau of Plant Pathology, P. O. Box 1269, Gainesville, FL 32602.

The fungus grows at 0 C, but optimum growth occurs at 20-22 C, and growth decreases markedly above 25 C (4). For this reason, the incidence of gray mold is greatest during cool, moist conditions.

SYMPTOMS. The gray mold fungus may cause a myriad of symptoms, ranging from leaf spots to flower blights, stem cankers, damping off, or fruit rot. One sign, however, is characteristic of Botrytis infection. This is the profuse gray brown sporulation of the fungus on old diseased tissue (Fig. 1A).

CONTROL. Sanitation and manipulation of environmental conditions are paramount control procedures. Recent studies at the University of Florida have suggested that sanitation alone is not sufficient to control the spread of light infections if all other disease conditions are favorable (6). The prevention of long periods of free moisture by adequate spacing, pruning, and forced ventilation; the removal of diseased material (inoculum sources); and careful handling to prevent wounding can reduce losses due to gray mold.

Recently labeled fungicides (applied at manufacturer's recommendations) such as vinclozolin (Ornalin 50 WP or Ronilan 50 WP) and iprodione (Chipco 26019 or Rovral) are also useful for disease control, along with chlorothalonil, mancozeb, Botran, Zyban, Mertect 340F, zineb, and captan (8). Some of these fungicides are available in smoke bomb formulations for use in greenhouses to give excellent coverage with minimum visible residue. Benomyl, once widely used for Botrytis control, is no longer recommended because of stable fungal resistance to the fungicide. Although some resistance has been detected with vinclozolin and iprodione, this resistance is not stable or widespread (7).

SURVEY AND DETECTION. Look for old infected tissue covered with a gray brown fuzzy mat of spores and mycelium. The use of a hand lens may reveal the characteristic "grape cluster" arrangement of the spores (Fig. 1B).

LITERATURE CITED.

1. COLEY-SMITH, J. R., K. VERHOEFF, and W. R. JARVIS. 1980. The biology of Botrytis. Academic Press, London. 318 pp.
2. ELLIS, M. B., and J. M. WALLER. 1974. Sclerotinia fuckeliana. CMI Descriptions of Pathogenic Fungi and Bacteria No. 431. Commonw. Mycol. Inst. Kew, England. 2 pp.
3. HORST, R. K. 1979. Westcott's Plant Disease Handbook, 4th ed. Van Nostrand Reinhold Co., New York. 803 pp.
4. JARVIS, W. R. 1977. Botryotinia and Botrytis species: taxonomy, physiology, and pathogenicity. Canada Dept. Agr. Mono. No. 15. 195 pp.
5. JOINER, J. N. 1981. Foliage Plant Production. Prentice-Hall, Inc., Englewood Cliffs, N.J. 614 pp.
6. PLAUT, J. L. 1980. Epidemic progress of three pathosystems as affected by initial disease severity. M. S. Thesis. Univ. Fla. 106 pp.
7. POMMER, E. H., and G. LORENZ. 1982. Resistance of Botrytis cinerea Pers. to dicarboximide fungicides a literature review. Crop Protection 1:221-230.
8. SIMONE, G. W. 1982. Fungicides for use on ornamentals - 1982. Univ. Fla. I.F.A.S. Circ. 484-A. 45 pp.

Contribution No. 535, Bureau of Plant Pathology.